

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellant: HARVILLE, et al. Patent Application
Application No.: 10/698,196 Group Art Unit: 2457
Filed: October 30, 2003 Examiner: Burgess, Barbara N.
For: SERVICE MANAGEMENT USING MULTIPLE SERVICE LOCATION
MANAGERS

APPEAL BRIEF

Table of Contents

	<u>Page</u>
Real Party in Interest	1
Related Appeals and Interferences	2
Status of Claims	3
Status of Amendments	4
Summary of Claimed Subject Matter	5
Grounds of Rejection to Be Reviewed on Appeal	8
Argument	9
Conclusion	19
Appendix - Clean Copy of Claims on Appeal	20
Appendix – Evidence Appendix	29
Appendix – Related Proceedings Appendix	30

I. Real Party in Interest

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 11445 Compaq Center Drive West, Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

II. Related Appeals and Interferences

There are no related appeals or interferences known to the Appellants.

III. Status of Claims

Claims 1 and 38-76 are pending. Claims 2-37 are cancelled. Claims 1 and 38-76 are rejected. This Appeal involves Claims 1 and 38-76.

IV. Status of Amendments

All proposed amendments have been entered. An amendment subsequent to the Final Action has not been filed.

200313240-1
Application No.: 10/698,196

Group Art Unit: 2457

V. Summary of Claimed Subject Matter

Independent Claims 1 and 56 of the present application pertain to embodiments associated with managing a streaming media service and a system for providing streaming content, respectively.

As recited in Claim 1, “[a] method for managing a streaming media service” is described. This embodiment is depicted at least in Fig. 3. “Figure 3 is a flowchart 300 of operations performed in accordance with an embodiment of the present invention for managing a streaming media service.” (page 48, lines 1-2). “At operation 302, a request for a streaming media service is received from a client wherein the streaming media service includes a media service component” (page 48, lines 17-19). “At operation 304 of Figure 3, a service location manager to which to provide the request is selected from a plurality of service location managers” (page 48, lines 22-23). “At operation 306, a service provider to which to assign the media service component is selected from a plurality of service providers of a network” (page 49, lines 2-3). As described in the instant specification, with reference at least to Fig. 1A, “[s]ervice location managers 120 and 122 function to select a service provider (e.g., service provider 130, 132, 134 or 136) that can perform a requested type of service on an item of content to produce a service result that is provided to a client device 150. One or more service providers are known to each service location manager, and each service location manager selects among the service providers known to it in order to assign a service provider to perform a requested service” (page 15, lines 4-10). “At operation 308 of Figure 3, the service provider selected to perform the media service component is informed of its assignment, therein enabling the requested streaming media service to be performed on streaming media” (page 49, lines 7-9). Also, “providing said client information for locating

and contacting said service provider to receive said streaming media from said service provider without utilizing said service location manager” can be found at least at page 22 lines 18-25 and page 34, lines 9-15.

As recited in Claim 56, “[a] system for providing streaming content to a client device” is described. This embodiment is depicted at least in Figures 1A, 1B and 2. “Figure 1A is a block diagram of a system 100 for servicing content from a content source 110 and for delivering the service result content to a client device 150 in accordance with an embodiment of the present invention” (page 7, lines 1-3). “[S]ystem 100 includes a plurality of service location managers exemplified by service location managers 120 and 122, a plurality of service portals exemplified by service portals 140 and 142, and a plurality of service providers exemplified by service providers 130, 132, 134 and 136” (page 10, lines 1-4). “Service providers 130, 132, 134 and 136 each function to provide one or more types of services” (page 14, lines 13-15). Moreover, the specification recites that “[p]ortals 140 and 142 can each be well-published portal sites that can each serve as the first point of contact between client device 150 and system 100” (page 11, lines 13-14). “At the beginning of a session, client device 150 sends message 1 to a portal (e.g., 140)” (page 25, lines 6-8). “After receiving message 1, portal 140 selects a service location manager (e.g., 120 or 122) to which to send message 2” (page 26, lines 10-11). “[S]ervice location manager 120 selects from among the service providers (e.g., 130 and 132) that it supervises which one is to perform the service identified from message 2” (page 31, lines 17-19). “Within Figure 1A, in one embodiment, the addition of message A from service location manager 120 to the selected service provider (e.g., 130) is shown. With reference to the present example, message A can be sent from service location manager 120 to service provider 130 at any time after message

2 and before message 5” (page 39, lines 16-20). “[I]n addition to identifying the item of content and perhaps the content source, message A can also include information enabling service provider 130 to establish communication with client device 150. In other words, instead of having client device 150 initiate the transfer of communication from portal 140 to service provider 130, the transfer of communication can be initiated by service provider 130 in a manner that can still be seamless and transparent to a user of client device 150” (page 40, lines 13-19). Also, “providing said service provider with information to transfer communication from said portal to said service provider for providing said streaming content to said client from said service provider” can be found at least at page 22 lines 18-25 and page 34, lines 9-15.

VI. Grounds of Rejection to Be Reviewed on Appeal

1. Claims 1 and 38-76 are rejected under 35 U.S.C. §103(a) as being unpatentable over Lumelsky et al. (US Patent 6,529,950), hereinafter referred to as “Lumelsky,” in view of Pitkin, et al. (US Patent 5,341,477), hereinafter referred to as “Pitkin.”

VII. Argument

1. Whether Claims 1 and 38-76 are rejected under 35 U.S.C. §103(a) as being unpatentable over Lumelsky (US Patent 6,529,950) in view of Pitkin (US Patent 5,341,477).

The instant Office Action dated February 3, 2011, states (paragraph 4 of page 2 in section 2) that Claims 1 and 38-76 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,529,950 by Lumelsky et al., hereinafter referred to as “Lumelsky” in view of U.S. Patent No. 5,341,477 by Pitkin et al., hereinafter referred to as “Pitkin.” Appellants have reviewed the asserted art and respectfully submit that the asserted art does not describe, teach or suggest the instant Application’s claimed embodiments for at least the following rationale.

Appellants respectfully submit that “[i]t is improper to combine references where the references teach away from their combination” (emphasis added; MPEP 2145(X)(D)(2); *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983)). Appellants respectfully note that “[a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention” (emphasis in original; MPEP 2141.02(VI); *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)). “[A] reference will teach away if it suggests that the line of development flowing from the reference’s disclosures is unlikely to be productive of the result sought by the applicant. *In re Gurley*, 31 USPQ2d 1130 (Fed. Cir. 1994).”

“As reiterated by the Supreme Court in *KSR*, the framework for the objective analysis for determining obviousness under 35 U.S.C. 103 is stated in *Graham v. John Deere*

Co., 383 U.S. 1, 148 USPQ 459 (1966). Obviousness is a question of law based on underlying factual inquiries” including “[a]scertaining the differences between the claimed invention and the prior art” (MPEP 2141(II)). “In determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious” (emphasis in original; MPEP 2141.02(I)).

Additionally, MPEP §2141.02 VI provides, “[a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention” (emphasis added; MPEP 2141.02 VI, *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 [Fed. Cir. 1983], *cert. denied*, 469 U.S. 851 [1984]).

Appellants respectfully note that “[t]he prior art reference (or references when combined) need not teach or suggest all the claim limitations. However, Office personnel must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art” (emphasis added; MPEP 2141[III]).

Appellants respectfully submit that embodiments of Appellants’ Claims 1 and 56 as a whole would not have been obvious, and therefore the instant Office Action does not satisfy the requirements for a rejection of Claims 1 and 56 under 35 U.S.C. §103(a). In particular, Appellants respectfully submit that the instant Office Action fails to explain the differences between Lumelsky, Pitkin and Appellants’ claimed features, in which Lumelsky and Pitkin teach away from features of Appellants’ Claims 1 and 56. Moreover, Appellants respectfully

submit that the instant Office Action fails to explain why these differences would have been obvious to one of ordinary skill in the art.

A PRIOR ART REFERENCE MUST BE CONSIDERED IN ITS ENTIRETY, I.E., AS A

WHOLE, INCLUDING PORTIONS THAT WOULD LEAD AWAY FROM THE

CLAIMED INVENTION

AND

IT IS IMPROPER TO COMBINE REFERENCES WHERE THE REFERENCES TEACH

AWAY FROM THEIR COMBINATION

LUMELSKY

This section describes Appellants' understanding of what Lumelsky teaches.

Lumelsky teaches a policy-based multivariant application-level negotiation for multimedia services (title, abstract). A client application sends a generic request for a service to a service requestor, which in turn sends the generic request to a negotiator, which in turn sends the generic request to a service mapper that uses a directory to find locations that can satisfy the generic request (Col. 5 line 42 to Col. 6 line 49, Col. 9 line 54 to Col. 11 line 10).

Both the service mapper and the negotiator have policies that they respectively apply to the set of locations that the service mapper finds using the directory to turn the generic request into a specific request (Col. 6 lines 18-36). For example, the service mapper applies policies to the set of locations that it located using the directory. The service mapper communicates the subset of locations that result from applying its policies to the negotiator. The negotiator applies its own policies to the subset of locations resulting in a second subset

of locations, which it communicates to the service requestor, which in turn communicates the second subset of locations to the client application. The client application can then send an acceptance of one of the locations in the second subset of locations to the service requestor (Col. 8 lines 26-29).

Therefore, Appellants respectfully submit that the application of policies on a set or a subset of locations to turn a generic request into a specific request is one of Lumelsky's intended purposes. Appellants respectfully submit that applying policies at the service mapper and the negotiator as the found locations are being communicated back to the client application so that the client application can respond by accepting one of the found locations is one of Lumelsky's principles of operation.

LUMELSKY TEACHES AWAY FROM CLAIM 1

This section describes Appellants' understanding of why Lumelsky teaches away from independent Claim 1.

Appellants respectfully submit that Lumelsky teaches away from "providing, performed by said computer processor, information to said client, wherein said information is for locating and contacting said service provider to receive said streaming media from said service provider without utilizing said service location manager," as recited by independent Claim 1. For example, instead of "providing ... said client ... information ... for locating and contacting said service provider to receive said streaming media from said service provider without utilizing said service location manager," Appellants understand Lumelsky to teach utilizing Lumelsky's service mapper and negotiator as a part of providing

information to Lumelsky's client application. More specifically, Appellants understand Lumelsky to teach applying policies at the service mapper and the negotiator as the found locations are being communicated back to the client application so that the client application can respond by accepting one of the found locations. Further, Appellants respectfully submit that Lumelsky requires his service mapper and negotiator to apply the policies because the application of policies on a set or a subset of locations to turn a generic request into a specific request is one of Lumelsky's intended purposes. Therefore, Appellants understand Lumelsky to teach away from "providing ... said client ... information ... for locating and contacting said service provider to receive said streaming media from said service provider without utilizing said service location manager," as recited by independent Claim 1.

Further, since Lumelsky teaches away from independent Claim 1, there is no motivation to combine Lumelsky with any other asserted art, such as Pitkin, to remedy the deficiencies in Lumelsky to render Claim 1 obvious.

LUMELSKY TEACHES AWAY FROM CLAIM 56

This section describes Appellants' understanding of why Lumelsky teaches away from independent Claim 56.

Appellants understand Lumelsky to teach away from "said service location manager...for providing said service provider with information to transfer communication from said portal to said service provider for providing said streaming input content to said client device from said service provider," as recited by independent Claim 56. For example, Appellants understand Lumelsky to teach applying policies at the service mapper and the

negotiator as the found locations are being communicated back to the client application so that the client application can respond by accepting one of the found locations. Appellants respectfully submit that applying policies at the service mapper and the negotiator as the found locations are being communicated back to the client application teaches away from “said service location manager...for providing said service provider with information to transfer communication from said portal to said service provider for providing said streaming input content to said client device from said service provider,” as recited by independent Claim 56.

Further, since Lumelsky teaches away from independent Claim 56, there is no motivation to combine Lumelsky with any other asserted art, such as Pitkin, to remedy the deficiencies in Lumelsky to render Claim 56 obvious.

PITKIN

This section describes Appellants’ understanding of what Pitkin teaches. Appellants understand Pitkin to state at Col. 2 lines 45-47, “[b]ased upon the policy, the broker thus suggests to the client a server which is best able to satisfy the client’s service request.” At Col. 2 lines 51-55, Pitkin’s states “...the client then requests the service from the recommended server, and the server is responsible for granting the request only if the server currently has the required capacity available for that service.”

PITKIN TEACHES AWAY FROM CLAIM 1

This section describes Appellants’ understanding of why Pitkin teaches away from independent Claim 1.

First, Appellants respectfully submit that “the broker thus suggests to the client a server,” (emphasis added; Pitkin Col. 2 lines 45-47), teaches away from “selecting...a service provider to which to assign said media service component,” as disclosed by independent Claim 1.

Second, Appellants respectfully submit that “...the client then requests the service from the recommended server, and the server is responsible for granting the request only if the server currently has the required capacity available for that service” (emphasis added; Pitkin, Col. 2 lines 51-55) teaches away from “informing ...said service provider of said assignment to perform said media service component,” and “causing said service provider to prepare to perform said streaming media service on streaming media,” as recited by independent Claim 1.

Further, since Pitkin teaches away from independent Claim 1, there is no motivation to combine Pitkin with any other asserted art, such as Lumelsky, to remedy the deficiencies in Pitkin to render Claim 1 obvious.

PITKIN TEACHES AWAY FROM CLAIM 56

This section describes Appellants’ understanding of why Pitkin teaches away from independent Claim 56.

First, Appellants respectfully submit that “the broker thus suggests to the client a server,” (emphasis added; Pitkin Col. 2 lines 45-47), teaches away from “said service

location manager...for selecting a service provider...and informing said service provider that it is assigned to perform said service..." as recited by independent Claim 56.

Second, Appellants respectfully submit that "...the client then requests the service from the recommended server, and the server is responsible for granting the request only if the server currently has the required capacity available for that service" (emphasis added; Pitkin, Col. 2 lines 51-55) teaches away from "said service location manager...for selecting a service provider...and informing said service provider that it is assigned to perform said service..." as recited by independent Claim 56.

Further, since Pitkin teaches away from independent Claim 56, there is no motivation to combine Pitkin with any other asserted art, such as Lumelsky, to remedy the deficiencies in Pitkin to render Claim 56 obvious.

SUMMARY

Appellants respectfully note that the instant Office Action states (paragraph 2 of page 16 in the response to arguments) that: "Lumelsky is not cited for teaching this feature," viz., the embodiment, 'providing said client...information for locating and contacting said service provider to receive said streaming media from said service provider without utilizing said service location manager.' "See the rejection of claims 1 and 56. Pitkin is cited for teaching this feature." In addition, Appellants respectfully note that the instant Office Action states (paragraph 3 of page 16 through paragraph 1 of page 17 in the response to arguments) that: "Pitkin is not cited for teaching this feature. See the rejection of claims 1 and 56. Lumelsky is cited for teaching this feature," viz., the embodiment, 'informing ... said service provider of

said assignment to perform said media service component' and 'causing said service provider to prepare to perform said streaming media service on streaming media.'

In response to the Office Actions' response, Appellants respectfully note that "[a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention" (emphasis in original; MPEP 2141.02(VI); *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)). "[A] reference will teach away if it suggests that the line of development flowing from the reference's disclosures is unlikely to be productive of the result sought by the applicant. *In re Gurley*, 31 USPQ2d 1130 (Fed. Cir. 1994)."

Therefore, Appellants respectfully maintain that independent Claims 1 and 56 are patentable for at least the reasons that Lumelsky and Pitkin teach away from independent Claims 1 and 56, as discussed above.

Appellants respectfully note that the instant Office Action also states (paragraph 1 of page 16 in the response to arguments) that: "[i]n response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement

or incorporate Pitkin's providing client information for locating and contacting a service provider without utilizing a service location manager in Lume's method decreasing client connection time.”

In response to the Office Actions' response, Appellants respectfully note that “[i]t is improper to combine references where the references teach away from their combination” (emphasis added; MPEP 2145(X)(D)(2); *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983)). Therefore, Appellants respectfully maintain that, since Pitkin teaches away from independent Claims 1 and 56, Pitkin cannot be combined with any other asserted art, such as Lumelsky, to remedy the deficiencies in Pitkin, as discussed above. Similarly, Appellants respectfully maintain that, since Lumelsky teaches away from independent Claims 1 and 56, Lumelsky cannot be combined with any other asserted art, such as Pitkin, to remedy the deficiencies in Lumelsky, as discussed above.

Thus, Appellants respectfully submit that a *prima facie* case of obviousness has not been met and Claims 1 and 56 are patentable over Lumelsky in view of Pitkin and overcome the rejection under 35 U.S.C. 103(a). Moreover, Appellants respectfully submit that Claims 38-55 and Claims 57-76 are also patentable over Lumelsky in view of Pitkin, because Claims 38-55 and Claims 57-76 include the embodiments recited in independent Claims 1 and 56 upon which Claims 38-55 and Claims 57-76 are respectively dependent. In view of the combination of Lumelsky and Pitkin not satisfying the requirements of a *prima facie* case of obviousness, Appellants respectfully submit that the embodiments of Appellants' Claims 1 and 38-76 overcome the rejection under 35 U.S.C. § 103(a) and are in condition for allowance.

Conclusion

Appellants believe that pending Claims 1 and 38-76 are patentable over Lumelsky in view of Pitkin. In summary, Appellants respectfully submit that the Office Action's rejection of Claims 1 and 38-76 does not satisfy the requirements of a *prima facie* case of obviousness as claim embodiments are not met by Lumelsky, or Pitkin, either alone or in combination. Accordingly, Appellants respectfully submit that the rejection of Claims 1 and 38-76 under 35 U.S.C. §103(a) is improper and should be reversed.

Appellants respectfully request that the rejection of Claims 1 and 38-76 be reversed. The Appellants wish to encourage the Examiner or a member of the Board of Patent Appeals to telephone the Appellants' undersigned representative if it is felt that a telephone conference could expedite prosecution.

Respectfully submitted,

WAGNER BLECHER LLP

Dated: 06/01/2011

/John P. Wagner, Jr./

John P. Wagner, Jr.
Registration No. 35,398

Wagner Blecher LLP
123 Westridge Drive
Watsonville, CA 95076
(408) 377-0500

200313240-1
Application No.: 10/698,196

Group Art Unit: 2457

VIII. Appendix - Clean Copy of Claims on Appeal

1. A computer implemented method for managing a streaming media service, said method comprising:

receiving a request for a streaming media service from a client at a computer processor, said streaming media service comprising a media service component;
selecting, performed by said computer processor, a service location manager to which to provide said request from a plurality of service location managers;

selecting, performed by said computer processor, a service provider, to which to assign said media service component, from a plurality of service providers of a network, wherein said selecting said service provider is performed by said service location manager;

informing, performed by said computer processor, said service provider of said assignment to perform said media service component, causing said service provider to prepare to perform said streaming media service on streaming media; and

providing, performed by said computer processor, information to said client, wherein said information is for locating and contacting said service provider to receive said streaming media from said service provider without utilizing said service location manager.

38. The method as described in Claim 1, wherein said selecting said service location manager comprises:

maintaining a record comprising identifying information of a service location manager among said plurality of service location managers; and
selecting said service location manager according to said record.

39. The method as described in Claim 1, wherein said selecting said service location manager comprises:

maintaining a record comprising a prioritized list of at least one service location manager among said plurality of service location managers; and

selecting said service location manager according to the order of priority of said list of said record.

40. The method as described in Claim 1, wherein said selecting said service location manager comprises:

maintaining a record comprising identifying information for a set of service location managers among said plurality of service location managers; and

selecting said service location manager randomly from said record.

41. The method as described in Claim 1, wherein said selecting said service location manager comprises:

maintaining a record comprising identifying information for a set of service location managers among said plurality of service location managers; and

selecting said service location manager in a round robin manner from said record.

42. The method as described in Claim 1, wherein said selecting said service location manager comprises a comparison of processing loads of at least two service location managers among said plurality of service location managers.

43. The method as described in Claim 1, wherein said selecting said service location manager comprises a comparison of available resources of a first set of service providers supervised by said service location manager and available resources of a second set of service providers supervised by a second service location manager.

44. The method as described in Claim 1, wherein said selecting said service location manager is based on an estimate of a network communication condition between two entities connected by the network.

45. The method as described in Claim 44, wherein said estimate of said network communication condition is associated with said client.

46. The method as described in Claim 44, wherein said estimate of said network communication condition is associated with a content source of said streaming media.

47. The method as described in Claim 1, wherein said selecting said service location manager is based on one of the group consisting of: pending service request queue length of a service location manager, expected latency of a service location manager for assigning said service request, and available network communication bandwidth of a service location manager.

48. The method as described in Claim 1, further comprising:

notifying a second service location manager among said plurality of service location managers of the assignment of said service provider to perform said media service component.

49. The method as described in Claim 1, further comprising:

notifying a second service location manager among said plurality of service location managers of the completion of performance of said media service component.

50. The method as described in Claim 1, further comprising:

a second service location manager assuming the role of said service location manager if said service location manager is determined to be non-responsive.

51. The method as described in Claim 1, further comprising:

maintaining a record comprising identifying information of a set of service location managers among said plurality of service location managers, each service location manager of said set of service location managers supervising said service provider; and

notifying said set of service location managers according to said record of said assignment of said service provider to perform said media service component.

52. The method as described in Claim 51, wherein said maintaining and said notifying is performed by said service provider or said service location manager.

53. The method as described in Claim 1, further comprising:

maintaining a record comprising identifying information of a set of service location managers among said plurality of service location managers, each service location manager of said set of service location managers supervising said service provider; and

notifying said set of service location managers according to said record of the completion of performance of said media service component by said service provider.

54. The method as described in Claim 53, wherein said maintaining and said notifying is performed by said service provider or said service location manager.

55. The method as described in Claim 1, wherein said service provider is supervised by more than one service location manager among said plurality of service location managers.

56. A computer system for providing streaming content to a client device, said system comprising:

a plurality of service location managers, wherein said plurality of service location managers are hardware nodes;

a plurality of service providers, each service provider capable of performing a service on an item of streaming input content to produce said streaming content, wherein said plurality of service providers are hardware computer systems; and

a portal providing a first point of contact for said client device, said portal for receiving from said client device a request for performance of said service on an item of streaming input content, said portal for selecting a service location manager, to which to provide said request, from said plurality of service location managers, said service location

manager for receiving said request from said portal and for selecting a service provider to perform said service from said plurality of service providers and informing said service provider that it is assigned to perform said service on said streaming input content to produce said streaming content and for providing said service provider with information to transfer communication from said portal to said service provider for providing said streaming input content to said client device from said service provider, wherein said portal is a hardware node.

57. The system of Claim 56, wherein said portal maintains a record comprising a prioritized listing of at least one service location manager among said plurality of service location managers and selects said service location manager in order of priority according to said prioritized listing.

58. The system of Claim 56, wherein said portal maintains a record comprising identifying information of a set of service location managers among said plurality of service location managers and selects said service location manager in a round robin manner from said record.

59. The system of Claim 56, wherein said portal selects said service location manager by comparing processing loads of at least two service location managers among said plurality of service location managers.

60. The system of Claim 56, wherein said portal selects said service location manager by comparing available resources of a first set of service providers supervised by

said service location manager and available resources of a second set of service providers supervised by a second service location manager.

61. The system of Claim 56, wherein said portal selects said service location manager based on an estimate of a network communication condition between two entities connected by the network.

62. The system of Claim 56, wherein said service location manager notifies a second service location manager among said plurality of service location managers of said assignment of said service provider to perform said service.

63. The system of Claim 56, wherein said portal determines if said service location manager of said plurality of service location managers is non-responsive.

64. The system of Claim 63, wherein said portal activates a second service location manager of said plurality of service location managers to assume the role of said service location manager, provided said portal determines said service location manager to be non-responsive.

65. The system of Claim 56, wherein said service provider is supervised by more than one service location manager of said plurality of service location managers.

66. The system of Claim 65, wherein said service provider maintains a record comprising identifying information of service location managers that supervise it.

67. The system of Claim 66, wherein said service provider notifies said service location managers that supervise it of said assignment to perform said service.

68. The system of Claim 66, wherein said service provider notifies said service location managers that supervise it of completion of performance of said service by said service provider.

69. The system of Claim 65, wherein said service location manager maintains a record comprising identifying information of a second service location manager that also supervises said service provider.

70. The system of Claim 69, wherein said service location manager notifies said second service location manager of said assignment of said service provider to perform said service.

71. The system of Claim 69, wherein said service location manager notifies said second service location manager of completion of performance of said service by said service provider.

72. The system of Claim 56, wherein said service provider is supervised by a first service location manager, and said first service location manager transfers supervision of said service provider to a second service location manager.

73. The system of Claim 72, wherein said transfer is based on a computational load of said first service location manager.

74. The system of Claim 72, wherein said transfer is based on availability of resources of a service provider supervised by said second service location manager.

75. The system of Claim 56, wherein said service provider is selected to be supervised by said service location manager based on a network communication condition between said service location manager and said service provider.

76. The system of Claim 56, wherein said plurality of service location managers comprises a master service location manager that monitors the status of other service location managers of said plurality of service location managers.

IX. Evidence Appendix

No evidence is herein appended.

X. Related Proceedings Appendix

No related proceedings.